

REMARKS

Claims 1-15 are currently pending in the present application. Claim 1 has been amended to correct a minor typographical error. New claims 8-15 have been added which find support in the original claims and the present specification at page 16, line 16-page 18, line 23. Applicant submits that no new matter has been added by way of the present amendment.

Rejection under 35 U.S.C. §103

Claims 1-7 stand rejected under 35 U.S.C. § 103 as being unpatentable over USP 6,403,716 to Nishihara (hereinafter "Nishihara"). Applicant respectfully traverses.

Nishihara discloses a thermoplastic rubber composition which comprises:

(A) 1-99 parts by weight of a specific crosslinkable rubbery polymer having a glass transition temperature not higher than -30°C and

(B) 1-99 parts by weight of a polypropylene resin (B) containing propylene units of not less than 50% by weight and units of ethylene or an α -olefin with 4-20 carbon atoms as a comonomer copolymerizable with propylene (total amount of (A) and (B) being 100 parts by weights), said thermoplastic rubber composition being crosslinked,

wherein said (B) comprises a polypropylene resin (B1) which generates a torque higher than M_0 after melting, and a polypropylene resin (B-2) which generates a torque not higher than M_0 after melting, in a melting test of said (B) in the presence of an organic peroxide (temperature condition being at 200°C), and M_0 , being a torque right after complete melting (claim 1).

In addition, the object of Nishihara is to provide a thermoplastic rubber composition which is superior in appearance, flexibility (feeling), mechanical strength and wear resistance and also enables stabilized quality due to an improved productivity as described at column 1, lines 38-44.

On the contrary, the present invention is directed to "a thermoplastic elastomer comprising a rubber (A) which is partially or all crosslinked, an isotactic polypropylene (B) having an isotactic pentad ratio of 0.8 or more, a syndiotactic polypropylene (C) having an syndiotactic pentad ratio of 0.6 or more and a softener (D), wherein the syndiotactic polypropylene (C) is contained in an amount of 0.5 to 10% by weight based on 100% by weight of the total amount of the crosslinked rubber (A), isotactic polypropylene (B), syndiotactic polypropylene (C) and softener (D), the thermoplastic elastomer having a melt flow rate of 0.01 to 1000 g/10 min., wherein the melt flow rate is measured at 230° C under a load of 10 kg according to ASTM D1238" as defined in present claim 1.

Moreover, the object of the present invention is to provide a thermoplastic elastomer having higher extrusion moldability than conventional thermoplastic elastomers, and a molded article of the thermoplastic elastomer as described on page 2, lines 18-22 of the specification.

The Examiner appears to take the position that a comparison of claim 1 of Nishihara with that of present claim 1 reveals that "a crosslinkable rubbery polymer (A)" of Nishihara corresponds to "a partially or all crosslinked rubber (A)" of the present invention. Additionally, the Examiner appears to take the position that, "a polypropylene resin (B) (a mixture of a polypropylene resin (B-1) and a polypropylene resin (B-2))" of Nishihara correspond to "an isotactic polypropylene (B) and a syndiotactic polypropylene (C)" of the present invention.

Similarly, it appears to be the Examiner's position that "a polypropylene resin (B-2)" of Nishihara corresponds to "an isotactic polypropylene (B)" of the present invention because Nishihara describes that "an isotactic polypropylene homopolymer and an isotactic copolymer resin with other α -olefins are preferable as the polypropylene resin (B-2) " at column 5, lines 46-58.

However, "a polypropylene resin (B-1)" of Nishihara does not correspond to "a syndiotactic polypropylene (C)" of the present invention.

As described in Nishihara at column 5, lines 20-38,

Typical examples of (B-1) are a copolymer resin containing not less than 50% by weight of polypropylene, and a particularly preferable comonomer copolymerizable with propylene is ethylene or α -olefin with carbon atoms of 4-20. An ethylene propylene random copolymer resin is most preferable.

Nishihara also teaches at column 13, lines 16-23, "the polypropylene resin (B-1)" is an ethylene propylene random copolymer but not a syndiotactic polypropylene, as follows:

Ethylene (ET)/propylene (PP) Copolymer Resin: Crosslinking Type (B-1)
Random ET-PP resin with ET/PP 7/93% by weight produced by Japan Polyolefin Co., Ltd. (referred to as EP1). Trade name is PM940M.

Various random ET-PP copolymer resins with different comonomer ratios of ethylene and propylene were prepared based on EP-1 by the known production process.

That is to say, when the Nishihara disclosure is compared to the present invention it is apparent that the constitution of each invention is different from each other.

A syndiotactic polypropylene (C) having a syndiotactic pentad ratio of 0.6 or more of the present invention in the resin hardly causes a reduction in the molecular weight in the presence of an organic peroxide. Moreover, by using a thermoplastic elastomer containing component (C) in an amount of 0.5 to 10% by weight based on 100% by weight of the total amount of the crosslinked rubber (A), isotactic polypropylene (B), syndiotactic polypropylene (C) and softener (D) as defined in present claim 1, the presently claimed thermoplastic elastomer achieves a molded article which scarcely adheres to a guide roll during extrusion molding and it therefore has good moldability as well as die-residue, as described on page 5, lines 6-9 of the specification.

Moreover, upon comparison of Examples 1-2 with Comparative Examples 1-2 in Table 1 on page 26 of the specification, it is clear that the thermoplastic elastomers having the

constitution of the present invention exhibit far superior product properties and extrusion characteristics such as die-residue or adherence to a guide roll as compared to those outside the scope of the present invention.

The Examiner has not provided any motivation as to why one of ordinary skill in the art would modify Nishihara invention (i.e., the "constitution" and "the object of the invention" differ from those of the present invention) in order to arrive at the present invention. In accordance with *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007), in formulating a rejection under 35 USC 103(a) based upon a combination of prior art elements, it remains necessary to identify the reason why a person of ordinary skill in the art would have combined the prior art elements in the manner claimed.

Accordingly, Applicant respectfully submits that Nishihara fails to render obvious the presently claimed invention. Reconsideration and withdrawal are respectfully requested.

Discussion of New Claims

Nishihara teaches that the peroxy compounds and crosslinking adjuvants should not be used in an amount less than 1% because lesser amounts result in insufficient crosslinking. See col. 6, line 28 – col. 7, line 23. However, new claims 8-15 recite using the peroxy compound and crosslinking adjuvants each in an amount of 0.01- 0.9% by weight. See also the present specification at page 16, line 16 - page 18, line 23.

A prior art reference must be considered in its entirety, i.e., as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984)(Emphasis in original). A *prima facie* case of obviousness may be rebutted by showing that the art, in any material respect, teaches away from the claimed invention. *In re Geisler*, 116 F.3d 1465, 1471, 43 USPQ2d 1362, 1366 (Fed. Cir. 1997). If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984).

Here, it is clear that Nishihara teaches away from using peroxy compounds and crosslinking adjuvants in an amount less than 1%. Additionally, Nishihara teaches that using an amount less than 1% renders the invention unsatisfactory for its intended purpose by yielding “insufficient crosslinking.” As such, in accordance with the Federal Circuit holdings above, there is no motivation to modify Nishihara to arrive at the invention of new claims 8-15.

In view of the foregoing, Applicant believes the pending application is in condition for allowance. A Notice of Allowance is earnestly solicited.

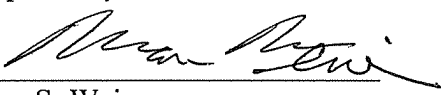
Conclusion

Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact Monique T. Cole, Reg. No. 60,154 at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37.C.F.R. §§1.16 or 1.14; particularly, extension of time fees.

Dated: July 6, 2007

Respectfully submitted,

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